



ROTATIONAL FILING SYSTEM FOR COMPACT DISKS

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BACKGROUND OF THE INVENTION

1 This application claims the benefit of U.S. Provisional Application No 60,504,689 filed
2 09/22/2003.

3 The present invention relates to the storage and retrieval of compact disks. Compact disks
4 are popular for storing electronic information, such as, data, computer software, audio and visual
5 material and especially music. Convenience dictates that such disks are stored at or near a work-
6 station, such as, a computer or CD Player. Therefore a desk top filing and retrieval system that
7 capitalizes on the economy of size of the compact disk and utilizes its circular form is
8 advantageous.

9 Indexing tabs for compact disks that are currently available do not include a flat surface
10 that serves a protector of the content surface of the compact disk and a carrier for the storage and
11 retrieval of compact disks outside their original commercial container.

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SUMMARY OF THE INVENTION

14 The present invention relates to a desk top rotational filing system for compact disks by
15 incorporating compact disks into a system of storage and retrieval outside their original
16 commercial containers. According to the invention, a carrier is combined with an associated
17 compact disk having a circular hole in its center to form a discrete carrier-compact disk unit.
18 Each unit is positioned adjacent to other such units to form a uniform plurality of discrete
19 carrier-compact disk units that are positioned on a support means so they can rotate about a

20 common axis. The carrier comprises a flat shaped body including a zone that coincides with the
21 center hole of its associated compact disk and has at least one tab containing indicia in reference
22 to the digital material stored on the compact disk and extends beyond the periphery of the
23 associated compact disk.

24 According to one aspect of the invention, the carrier body includes a means for removable
25 attachment that coincides with the center hole of the associated compact disk. The means for
26 removable attachment is adapted to engage the edge of the compact disk defining its center hole.

27 The carrier body is flat with opposite surfaces and can take any shape that is included
28 within the area of the associated compact disk; however, if the carrier body extends beyond the
29 periphery of the associated compact disk, it must be disk-shaped in order to rotate effectively on
30 a support means. Preferably, the carrier has a body that is disk shaped and equivalent in size to
31 the associated compact disk and can be a disk-shaped carrier pouch that is sized to contain its
32 associated compact disk.

33 According to the embodiments of the invention each discrete carrier-compact disk unit is
34 positioned substantially upright forming a uniform plurality of such units on a support means
35 adapted so the units can rotate about a common axis or stacked to form a uniform column of such
36 units that rotate about a common vertical axis. When stacked, each unit includes two tabs that are
37 positioned opposite to each other so they can be simultaneously grasped to lift a desired the unit
38 from the stack.

39 The rotational filing system of the invention operates so that once the plurality of discrete
40 units are formed, the tabs are moved from side to side by rotating the units about a common axis
41 until the desired indicia containing tab is found. The unit containing that tab is then removed

42 from the plurality of units comprising the compact disk file. The compact disk thereby selected is
43 separated from its carrier for immediate use or temporarily placed as a unit on a working surface
44 apart from the rotational filing system. In this way, the content surface of the compact disk is
45 protected by its carrier surface. A preferred support means comprises a housing adapted so that
46 the adjacent units in the rotational filing system are aligned to rotate about a common axis.

47 Another aspect of the invention is an improvement in the case where compact disks are
48 stored by stacking them upon a spindle extending vertically through the hole in each disk, the
49 improvement incorporating a carrier underlying its associated compact disk and adapted to the
50 spindle by a hole that is congruent to the hole in the compact disk.

51 Another aspect of the invention, is a disk-shaped compact disk file divider without
52 attachment means and having an indicia tab in reference to an adjacent compact disk stored in a
53 substantially upright position in a rotational file storage and retrieval system.

56 **BRIEF DESCRIPTION OF THE DRAWINGS**

57 FIG. 1 is a perspective view of a preferred embodiment of the rotational filing system of
58 the present invention resting in a housing and employing the carrier pouch of the present
59 invention.

60 FIG. 2 is a front elevation view of a preferred embodiment of the carrier body with
61 flanging means for attachment.

62 FIG. 3 is a front elevation view of the carrier body with an alternate flanging means for
63 attachment.

FIG. 4 is a close-up of the flanging means of FIG. 2.

FIG. 5 is a close-up of an alternate flanging means of FIG. 3.

FIG. 6 is a perspective view of a preferred carrier body with associated compact disk before being combined.

FIG. 7 is a perspective view of a preferred carrier-compact disk unit with flanging means for attachment.

FIG. 8 is a front elevation view an alternate carrier body forming a carrier-compact disk unit with including flanging means for attachment.

FIG. 9 is a front elevation view of an alternate carrier body with opposite tabs and including a hole that matches the center hole of a compact disk.

FIG. 10 is a front elevation view of the carrier pouch.

FIG 11 is a perspective view of the preferred carrier pouch of Fig. 10 containing an associated compact disk.

FIG. 12 is a front elevation view of a preferred carrier body having a hollow hub.

FIG. 13 is a vertical sectional view taken substantially upon a plane passing along line 54-54 of FIG 12.

FIG. 14 is a horizontal sectional view of two carrier-compact disk units that are stacked to form a uniform column, wherein each carrier has a hollow hub at the center and includes opposite tabs.

FIG. 15 is a perspective view of an improved plurality of compact disks stacked about a spindle acting as a support means employing the carrier pouch.

FIG. 16 is a front elevation view of a preferred disk shaped carrier body including

opposite tabs and a hole that is congruent with center hole of the compact disk.

FIG. 17 is a perspective view of a plurality of preferred carrier-compact disk units illustrating removal or replacement of one such unit according to the method of the present invention.

FIG. 18 is a horizontal sectional view of a preferred carrier-compact disk unit disposed in a housing as the support means

FIG. 19 is a horizontal sectional view of an alternate carrier-compact disk unit disposed in a housing as the support means.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

Fig. 1 illustrates an alternate embodiment of the rotational filing system **10** of the invention. Each compact disk **14** is contained in a semi-circular sleeve **12** with indicia tab **16** extending from the disk shaped carrier body **22** shown in Fig.10. This forms the carrier pouch **24** with the sleeve **12** shown in Fig.10. Fig.11 shows the pouch **24** containing compact disk **14** forming the carrier pouch unit **72**. Fig.1 therefore shows a uniform plurality of units **72** comprising the pouch **24** including compact disk **14** that rotate about the common horizontal axis **18**. As shown in Figures 1 and 11, the indicia tab **16** extends beyond periphery **26** of the compact disk **14**. The indicia tab **16** can include numerical indicia, alphabetic indicia or other recognizable and distinguishable indicia including but not limited to surface ornamentation, color distinction, geometrical configurations and the like that identifies the electronic or digital data stored on compact disk **14**. As shown in Fig 6, the preferred carrier body **22** includes a zone **30**

which coincides with the circular hole 28 of the compact disk **14** when the compact disk **14** and carrier body **22** are combined to form the preferred carrier-compact disk unit **44** in Fig. 7, including attachment means **36**. According to the invention, the means for attaching the carrier body to its associated compact disk resides at zone 30 which coincides with compact disk hole 28. Referring to Fig. 4, a preferred means for attachment is shown by enlarged area of the zone 30 of the preferred disk-shaped carrier body **22** in Fig. 2, wherein a flange **36** is provided including a semicircular segment **38** with extension **40** that extends through the hole 28 of the compact disk **14** in order to engage the edge **32** defining hole 28. In reference again to Fig. 7, the carrier body **22** is shown combined with the compact disk **14** by attachment means **36**. The flange **36** extends through the hole 28, shown in Fig 6, and has engaged the edge **32** defining hole 28 in order to form the preferred carrier-compact disk unit **44**. Fig. 5 is an enlarged area of zone 30 in Fig. 3 and shows an alternate attachment means **42** including two semi-circular components. Although the preferred carrier body is disk shaped, sized to the dimensions of the associated compact disk, an alternate form of carrier body **34** is shown in Fig. 8 employing the attachment means **36**. Therefore, the carrier body can be any shape so long as it is included within the surface area of the compact disk **14** as shown in Fig. 8.

Fig. 18 shows the preferred carrier-compact disk unit **44** disposed in housing **20** as viewed in horizontal cross-section. Raised sections **46**, contained in the housing, are provided as a support means for minimal frictional engagement of the unit **44** so that the unit **44** can rotate freely within the housing **20**. As shown by the arrows in Fig. 18, unit **44** can rotate right or left. When a plurality of such units are disposed in housing **20**, for example, each unit rotates right or left about the common axis 18 until the desired indicia tab is located. The unit **44** including

the desired indicia tab 16 is then removed from the housing and, after use placed back into the housing 20 as shown by the arrows in Fig. 17. Referring to Fig 19, an alternate carrier body 34 is shown with its associated compact disk 14. As noted above, the flat carrier body can be any shape so long as it is included within the surface area of compact disk 14. In the configuration shown Fig. 19 only the circular edge 26 of compact disk 14 makes rotational contact with raised areas 46 in housing 20 while, on the other hand, the entire carrier-compact disk unit 44 in Fig. 18 makes rotational contact with raised areas 46.

In the embodiments of the rotational filing system shown in Fig.'s 1, 17, 18 and 19, the carrier-compact disk units are positioned substantially upright; however, alternatively the rotational filing system includes carrier-compact disk units that are stacked to form a uniform column of units. Accordingly, the carrier disk body 22 includes a second tab 50 extending from carrier body 22 opposite indicia tab 16 shown in Fig. 12, so that both tabs can be simultaneously grasped to lift a carrier compact-disk unit from the stack of discrete carrier-compact disk units. This configuration requires, therefore, that each carrier body 22 underlies its associated compact disk 14. A hub 48 projecting above the surface of carrier body 22 in the zone 30 is provided as the means for attachment for engaging the edge 32 defining hole 28 of compact disk 14 to form the carrier-compact disk unit 58 shown in the vertical sectional view of Fig. 13 taken substantially upon a plane passing along line 54-54 of Fig. 12. As shown in Fig. 13, the hub 48 is preferably dome-shaped projecting above the surface of carrier body 22 in zone 30 forming a depression 52 at the opposite surface of carrier body 22 that is the inversion of preferred dome-shaped hub 48, thus forming a convex-concave element. In referring to the horizontal sectional view of Fig. 14, the hub 48 engages the depression 52 of the overlying unit 58 forming a plurality

of units that are stacked upon one another to form a uniform column of discrete units **58** that rotate about the common vertical axis 60. The hub of each unit **58** thereby serves as a support means for each overlying unit **58** forming a uniform column of stacked units that rotate clockwise or counter-clockwise about the vertical axis 60.

Although the dome-like hub **48** is preferred, the present invention includes a hub of any shape that can be mounted over the like hub of an adjacent carrier-compact disk unit that is adapted for the free rotation of the carrier-compact disk units about the vertical axis 60 when they are stacked, such as, a means for attachment that has one or more cylindrical elements or is conical. However, when the carrier-compact disk units are positioned upright on a support means, such as, shown in Fig.'s 1, 17, 18 and 19 the present invention includes any suitable means for attachment of the carrier body to its associated compact disk, including, but not limited to dome-shaped, conical, cylindrical, square, rectangular, triangular or tapered configurations that project from the surface of one side of the flat shaped carrier body and engage a portion or all of the edge defining the central circular hole 28 of the compact disk 14, although flange **36** and flange **42** are preferred. Furthermore, the means for attachment can be formed by a projection from the surface on one side of the carrier body or be a separate element that is attached to the carrier body using a suitable adhesive material.

The present invention also includes an improvement wherein a plurality of compact disks **14** are stacked upon a spindle having a base as a support means. Ordinarily, when stacked upon a spindle the fact that the compact disks can rotate about the spindle has no significance; however, the improvement utilizes this rotational characteristic of such configuration. Accordingly, the preferred disk-shaped carrier body 22 is adapted to be included in such a plurality of compact

176 disks. Fig. 16 shows the preferred carrier body **22** including indicia tab **16** and opposite tab **50**
177 and including hole **66** that lies in zone **30**. As pointed out above in reference to the preferred disk
178 shaped body, carrier zone **30** coincides with compact disk hole **28** when the carrier body is
179 combined with its associated compact disk **14** by attachment means in zone **30**. In this
180 improvement for compact disks, stacked upon a spindle, hole **66** replaces the attachment means
181 in zone **30** of the carrier body, so that the carrier and its associated compact disk are combined
182 without attachment means. Hole **66** is sized and aligned with compact disk hole **28** so that both
183 holes are congruent forming a carrier-compact disk unit that rotates about the spindle. Fig. 9
184 shows an alternate carrier body **68** including hole **66** that is sized to fit the spindle. Each carrier
185 body includes the indicia tab **16** and the opposite tab **50** for lifting the underlying carrier and its
186 associated compact disk from the spindle. Fig. 15 shows a stack of carrier pouch units **72**,
187 including the semi-circular sleeve **12**, stacked about spindle **62** resting on support means **70**
188 forming the stacked column of carrier pouch units **64** that rotate clock-wise or counter-clockwise
189 as shown by the arrows.

190 In selecting a compact disk stored according to the filing system of the present invention
191 the carrier-compact disk units are rotated manually by moving indicia tabs **16** to the right or left
192 or clockwise or counter-clockwise (when stacked) until the desired indicia tab is found, removing
193 the unit containing the desired indicia tab (for example in Fig. 17) and separating the carrier from
194 its associated compact disk for use. In addition to storage and retrieval, the carrier body serves to
195 protect the content surface of the compact disk outside of its original commercial container when
196 stored according to the present invention, or when a particular carrier-compact disk unit is
197 removed from the rotational file and placed upon a working surface without separating the carrier

198 from its associated compact disk in anticipation of use. The carrier and support means can made
199 of any light-weight material such durable plastic, cardboard or light weight metallic materials.

200 The present invention also includes a rotational filing system including the preferred disk-
201 shaped body **22** and indicia tab **16** as a compact disk file divider in the upright position without
202 attachment means, wherein the disk-shaped body **22** is adjacent or contiguous to its associated
203 compact disk.

204 The invention has been described with reference to the preferred embodiment. Obviously,
205 modifications and alterations will occur to others upon reading and understanding the preceding
206 detailed description. It is intended that the invention be construed as including all such
207 modifications and alterations insofar as they come within the scope of the appended claims or the
208 equivalents thereof.